

131648

AEC's One Ship 'Navy' Studies Sea-Level Canal Possibilities On 10,000 Mile Cruise

One September day in 1967, a small white ship named the Shimada returned to the port of Mayaguez on Puerto Rico's west coast after seven months and 10,000 miles of travel in the waters off Panama and Colombia.

Its mission: gather data to support engineering studies to determine the feasibility of constructing a sea-level canal to replace the existing Panama Canal.

The Shimada, often referred to as the Atomic Energy Commission's "one ship navy," is an oceanographic vessel named in honor of a Japanese-American scientist. The ship's cargo included tons of sea water, ocean bed sediments, and a variety of marine life ranging from one-cell organisms to large fish.

Sea Level Canal?

The Shimada, with its crew including nuclear scientists, took part in the nuclear safety feasibility studies conducted for the U.S. Atlantic-Pacific Interoceanic Canal Study Commission. The studies are part of an overall survey to determine possible sites for a sea-level canal which may be constructed by nuclear or conventional means, or a combination of both.

Such a waterway is being contemplated because the present lock canal is rapidly reaching its capacity for ship transits, and there are nearly 500 ships afloat or under construction too wide for the locks. An additional 900 that can squeeze through lightly loaded cannot go through fully loaded because the locks are not deep enough.

Aims of 'Plowshare'

The AEC is responsible for planning and executing the program of nuclear safety studies including meteorology, acoustic waves, ground motion, and bioenvironmental and radiation effects.

The AEC's program, titled "Plowshare," has as one of its major goals the development of an economic and practical nuclear excavation technology for use in large excavation projects such as harbors, canals and railway and highway transits through mountains. The Commission has been and is conducting Plowshare tests within the United States to clearly demonstrate that nuclear explosives can safely be used constructively.

The Shimada's scientists are staff members of the Puerto Rico Nuclear Center (PRNC), which was founded in 1957. It is run by the University of Puerto Rico for the AEC.

Among PRNC's several teaching and research programs is the Marine Biology Division, headed by Dr. Frank Lowman, a thin, sandy-haired biologist whose casual manner and sun-weathered complexion contradict what a nuclear scientist should look like. Dr. Lowman's credentials stretch back two decades and include survey work at the AEC's Pacific and Nevada Test Sites. He has been in Puerto Rico eight years.

Trace Elements Used

The PRNC part of the Commission's safety studies is to trace minute amounts of radioactive elements through the marine food chains to evaluate their possible effects on humans.

Dr. Lowman and his crew first had to know which stable (non-

radioactive) trace elements are present in the local marine environment and in what amounts they may be ingested and/or absorbed by marine life before predicting the behavior of radioactive trace elements. They also had to learn what species of marine life ate what other species and to what extent.

To obtain useful statistical data, thousands of measurements had to be made. Some trace elements are present in such minuscule amounts, among a host of more dominant elements, that they are like the proverbial needle in the haystack. Finding them quickly and measuring them accurately is no small task; samples collected during the Shimada's journey are still being analyzed in PRNC's Mayaguez laboratories 110 miles west of its San Juan facility.

Collected Samples

During the trip, the Shimada cruised in the Caribbean and the Pacific. It visited five nations and collected more than 20 tons of marine samples at 80 selected ocean sites. The ship crossed the Isthmus of Panama four times, taking samples twice on each side—once during the rainy season and once during the dry season. Some crew members also spent time aboard local fishing boats where they gathered samples of shrimp and other seafood (fresh fish was always on the Shimada "menu," though most of the catch wound up in the laboratory). The PRNC vessel also made a collection trip into the rivers feeding into the Gulf of San Miguel, Panama, sometimes penetrating into the dense jungle interior where Indians live in primitive villages.

The Shimada's crew acted as a team. Dr. John Martin took plankton and physical oceanographic measurements; Dr. Robert Ting and a Panamanian investigator, Generoso Emiliani, managed the collection and taxonomy of fish, mollusks and crustacea; Dr. Donald Swift and Greg Telek specialized in geological and sedimentation work; and Dr. Lowman and Allan Gordon of Woods Hole Laboratory performed seawater chemistry. Navigation, ship maintenance and other naval affairs were handled by Stephen Walsh, a recently retired Navy Com-

Continued on Page 4

ASCET Meeting Set In Clinton

The Oak Ridge-Knoxville chapter of the American Society of Certified Engineering Technicians will meet tomorrow, Thursday, August 28 at 7 p.m. at the Scottish Inn, Clinton.

New officers will be installed at this week's meeting. They will be D. L. Aubuchon, president; Ralph Dial, vice president; Henry Penland, treasurer; and J. E. White, secretary. White is a Y-12er.

Directors are A. W. Maxey and Craig Ross, both Y-12ers. J. C. Thompson, Y-12, is a national director for ASCET.

Dinner reservations for tomorrow's meeting should be made through Brad Napier, extension 3-5141; or D. L. Aubuchon, 3-7911. Napier, in Y-12's Development Division, is chairman of publicity for the board of ASCET.



CRITICALITY SAFETY CONSULTANTS met recently in Y-12 to appraise the philosophy and procedures of the plant's nuclear safety program. The committee is asked periodically to audit facts in Y-12's handling of fissionable materials. From left are George Strasser, Technical Services superintendent; Paul R. Vanstrum, vice president of Union Carbide's Nuclear Division; Dr. Thomas H. Pigford, University of California; Dr. Hugh C. Paxton, Los Alamos Scientific Laboratory; Dr. John W. Morfitt, Idaho Nuclear Corporation, Idaho Test Site; Jack McLendon, superintendent of Radiation Safety; and W. J. Wilcox, the Nuclear Division's technical director.

Criticality Safety Consultants Again Audit Plant's Practices, Philosophy

The Criticality Safety Consultants recently met again in Oak Ridge. The committee periodically audits Y-12's nuclear safety program.

"It is the policy of the Y-12 Plant to maintain an effective nuclear safety program for the prevention of unsafe accumulations of fissionable materials within plant equipment and facilities. Every practicable means is utilized to assure maximum nuclear safety. A method is considered practicable if its application does not seriously handicap production and its cost is not out of proportion to the expected gain in safety. However, nuclear safety will not be compromised for expediency in operations."

Note the number one consideration in plant operations . . . the maximum protection to personnel.

The Criticality Safety Committee consists of Dr. Hugh C. Paxton, Los Alamos Scientific Laboratory; Dr. John W. Morfitt, Idaho Nuclear Corporation, Idaho Test Site; and Dr. Thomas H. Pigford, University of California, Berkeley. The committee, upon invitation, appraises the plant's policies where fissile (radioactive) materials are considered.

Factors involved in the committee's study include the long range expectations in the development of enriched uranium bearing materials; technical requirements for efficient and safe storage of these materials; the transport and shipping container and requirements; the nuclear safety aspects of consolidation of operations; and the application of criticality calculations by computer.

The committee was welcomed with a general review of plant status by P. R. Vanstrum, the Nuclear Division's vice president. A review of plant modifications for future programs was given by George Jasny, superintendent of Y-12 Engineering. John M. Goggin, senior staff consultant, described nuclear materials development and the impact on criticality safety.

Particular emphasis was given on fire protection of enriched uranium areas.

The three-day meeting was held early this month . . . and afforded a free exchange of questions and recommendations . . . both from the consultants and Y-12ers involved in criticality problems.

Instrument Society

Meets Next Wednesday

The monthly meeting of the Oak Ridge Section of the Instrument Society of America will be held at the Holiday Inn, Oak Ridge, Wednesday, September 3. The social hour begins at 6 p.m. with dinner at 7, and the regular meeting at 8.

William McNamara, application engineer for Digital Equipment Corporation, Huntsville, Alabama, will speak on "The Un-Computer." The discussion will cover areas of industrial control and application of "smart" controllers to this field.

MacNamara has a BS in physics from the University of Pittsburgh. He previously worked for Westinghouse as an engineer.

RCA-UCC Establish Stenographer Course

Union Carbide Corporation has joined the Radio Corporation of America in establishing a training course that is expected to help relieve the present shortage of skilled stenographers. About 70 young women, many of them from minority groups, are being given an intensive 40-week training course by RCA Institutes. After the first four weeks of schooling, the 35 Union Carbide employees begin working half days in the New York office. After the successful completion of their course, it is hoped that they will continue at Union Carbide on a full-time basis. The training course was instituted under the JOBS program of the National Alliance of Businessmen and is partially funded by the U.S. Department of Labor.

Monday, September 1 Is Official Holiday

Y-12ers will enjoy another long week-end holiday this week . . . as the nation celebrates Labor Day just about as early as it can possibly come.

Monday, September 1 is an official holiday and no employee will be required to work unless his presence is required by security or continuous operations.

BULLETIN DELAY

Next week's Bulletin will be delayed in the mails one day due to Monday, September 1 being a holiday.

The Bulletin

Published Weekly For The
Y-12 Employees Of
UNION CARBIDE
CORPORATION



NUCLEAR DIVISION

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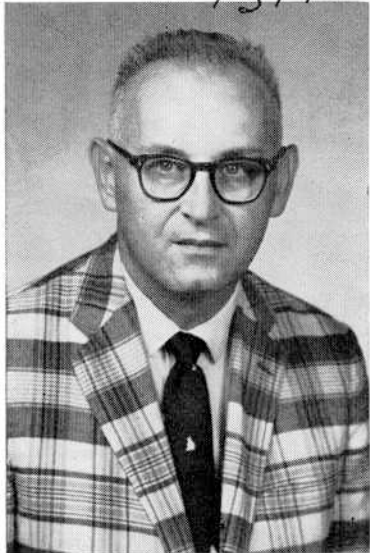
Y-12ers Give Paper This Week

13/024



R. K. Bennett

131748



F. R. Winslow

A technical paper authored by two Y-12 scientists will be presented at the Electron Microscopy Society of America's Annual Meeting this week. The meeting is set in St. Paul, Minnesota, August 26 through 29.

The paper, "Scanning Electron Microscope Fractography of a Uranium-7.5 Weight Percent Niobium-2.5 Weight Percent Zirconium Alloy," was written by R. K. Bennett and F. R. Winslow.

The specimens discussed in the paper were heated to 800 degrees Centigrade, water quenched and aged for one hour at 150°C. The specimens then were fractured by various methods before being examined with a scanning electron microscope, a relatively new laboratory instrument with a depth of field that permits examination of deep crevices in specimens.

This investigation was conducted in support of the U.S. Atomic Energy Commission's basic materials research program.

Safety's always in season.

Playhouse Sets First Try-Outs

The first tryouts of the season will be held at the Oak Ridge Playhouse on Tuesday and Wednesday, next week, September 2 and 3, for roles in Molier's comedy, "The Miser." Readings will begin in the Playhouse auditorium in Jackson Square at 7:30 and are open to everyone in this area. No previous theatre experience is required and newcomers are especially urged to come and get acquainted with the Playhouse.

"The Miser" is a classically funny story of mixed-up young love, an unbelievably stingy old man, and lost family reunited. Eleven men, 20 and older, and four women in the same age range, are required for the play. Rehearsals will begin the second week in September and the play will be presented for six performances beginning November 7.

The remainder of the Playhouse season includes "Long Day's Journey Into Night," "Hobson's Choice," "The Dybbuk," and "Don't Drink the Water." Extra Studio Productions will be announced which are free to those who are Playhouse members. For further information about auditions, tickets, or Playhouse memberships, contact Director Paul Ebert, Oak Ridge telephones 483-6193, or 483-1224.

Clothing Fires Most Dangerous

One of the most dangerous fires is the clothing fire. Each year burns from clothing fires cause hundreds of deaths, thousands of serious, often disfiguring, injuries. Most frequent victims are children and the elderly.

A helpful prevention measure is care in clothing selection. Heavy, smooth-surfaced fabrics resist burning better than light-weight, long-napped ones. Designs avoiding billowing folds of materials and long, loose sleeves reduce chances of clothing catching fire.

Most important of all is to appreciate that just about any clothing can burn, that a flame, spark or other intense heat may start it burning, and that the burning may be so dangerously rapid that the wearer is enveloped in flame.

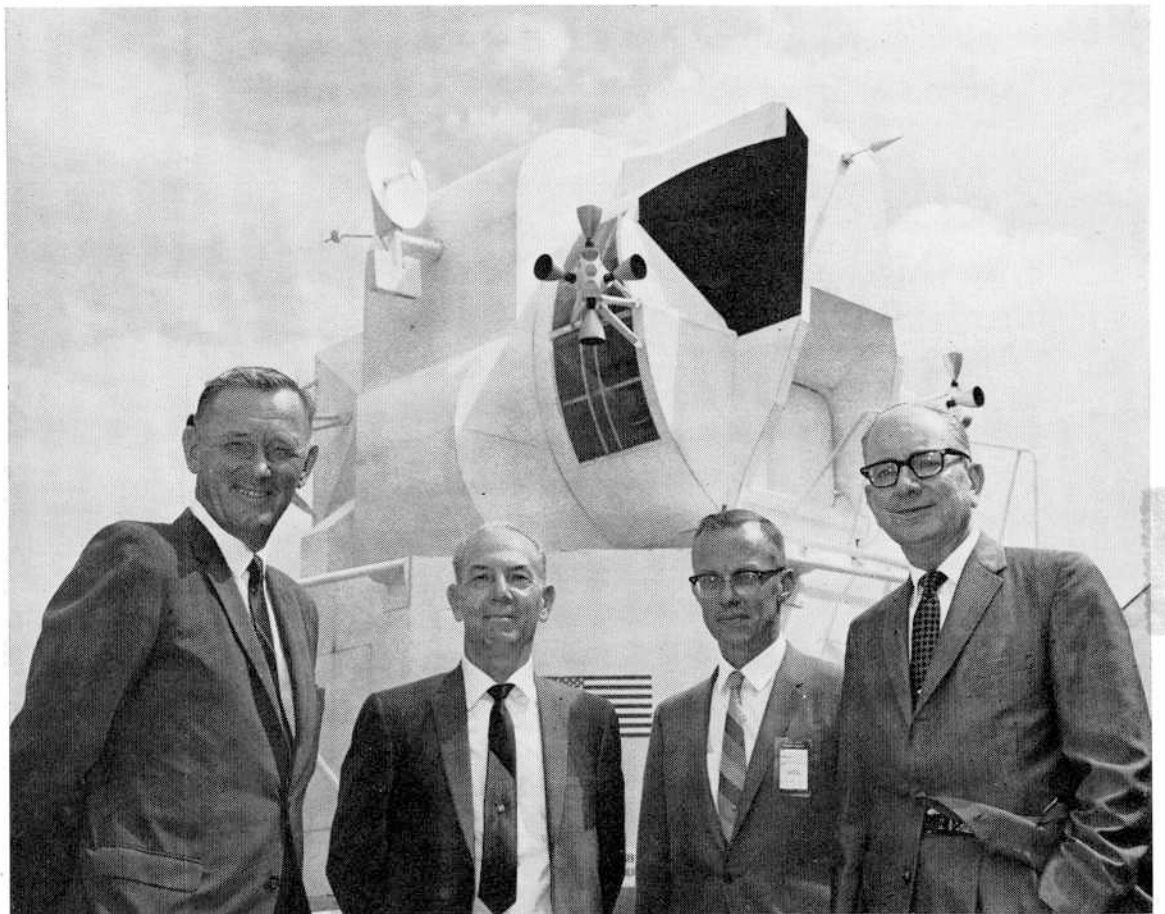
Safety from clothing fires calls for watchful care in all activities around stoves, heaters, fireplaces and outdoor fires, and in using matches and smoking materials.

FACTS OF LIFE

The hardest part of telling young folks the facts of life these days is finding something that they don't already know.



JAMES ERNEST CAYLOR was born May 12 in St. Luke's Hospital, Jacksonville, Florida, the son of Clyde and Carolyn Caylor. He is the second grand-child, also, for Ernest Lawson (Carolyn's dad) . . . Y-12 Buildings, Grounds and Maintenance Shops.



APOLLO XI . . . OUR COMPANY'S ROLE . . . In front of the full-scale mockup of the Lunar Excursion Module at NASA's Manned Spacecraft Center, Houston, are representatives of some of the Union Carbide groups which provided materials for the mission. They are, from left, V. E. Kraszeski, manager of the Linde air separation plant at Mims, Florida; precision tool and die maker Gilbert Fry of the Materials and Systems Division's plant at Kokomo, Indiana; Paul E. Wilkinson, Y-12; and Dr. C. M. Blair, corporate regional vice president for the Southwest.

Paul Wilkinson Attends 'Moon' Luncheon In Dallas Honoring NASA's Astronauts

Union Carbide Corporation, the NASA contractor with the greatest weight of products involved in the Apollo XI mission, was one of the 45 suppliers who took part in the enthusiastic victory celebration in Houston, Texas August 12.

The Rice Hotel luncheon was attended by 700 people, including astronauts Armstrong, Aldrin and Collins—plus NASA officials, city dignitaries and representatives of NASA contractors and suppliers. It was planned as a tribute to the combined government industry team which designed and produced the equipment and techniques which made possible man's first landing on the moon.

To Union Carbide, Apollo XI's success was particularly significant because of the quantity and variety of the company's contributions to the project. Two-thirds of the total weight of the Apollo XI rocket/space ship combination, as it sat on the launch pad, consisted of four million pounds of liquid oxygen for the Saturn V propulsion system. This oxygen, plus the liquid nitrogen used in launch preparation, came from Union Carbide's Linde air separation plant at Mims, Florida — across the river from Cape Kennedy.

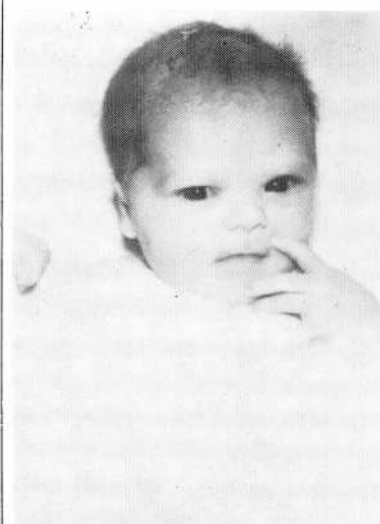
V. E. Kraszeski, manager of the Mims plant, was one of the Carbide representatives at the Houston luncheon. Another was W. J. Koeplin, Houston-based assistant regional manager for Linde's Gas Products Department.

The celebrated contingency sampler and vacuum moon box used by the astronauts to gather and store lunar samples for return to earth are products of Union Carbide's Nuclear Division. Attending the luncheon was Paul E. Wilkinson, associate project manager on the Apollo XI projects done in Oak Ridge. Besides the sampler and vacuum box, these projects included the envi-

ronmental control system for the underground radiation counting laboratory at the Manned Spacecraft Center — and the vacuum chambers and mechanical handling devices used at NASA's lunar receiving laboratory in Houston.

Many critical parts in the cluster of five F-1 engines used in the Saturn's first stage—and the J-2 engines powering the second and third stages—are made from nickel-base alloys produced at the Kokomo, Indiana plant of Union Carbide's Materials Systems Division. Such vital parts as turbine blades, manifolds and combustion chamber jackets.

Gilbert Fry, a skilled tool and die maker at the Kokomo plant—and the most senior hourly employee of the department supplying Apollo XI's needs—represented his group at the victory luncheon.



LEAH RENEE TIPTON was born May 8 to Mr. and Mrs. Kenneth Tipton (Vonnice . . . formerly of Labor Relations). She weighed six pounds, 10 ounces. Her grandfather, Ben H. Easterday is in Y-12's Utilities. Cute, isn't she?

Dr. C. M. Blair, Houston-based regional vice president for Union Carbide in the Southwest, represented both the corporation in general—and those of its divisions involved in Apollo XI not sending representatives to the victory luncheon. These included the Carbon Products Division, which provided graphite materials for the Apollo command ship's attitude control motors and escape tower (abort) mechanism; and the Korad Division; which produced the laser being used in the current earth-moon relationship studies.



Ride wanted from South Seneca Road, Oak Ridge, to Biology Portal, straight day. Dotty Sheffield, plant phone 3-5048, home phone Oak Ridge 483-0933.

Will join car pool (or even start one!) from 104 Nebraska Avenue, Oak Ridge, to Central Portal, straight day. J. N. Robinson, plant phone 3-7477, home phone Oak Ridge 483-0348.

Riders wanted or will join car pool from Bearden to West Portal, H & J Shifts. H. A. Hanna, plant phone 3-5291, home phone Knoxville 584-7879.

Riders wanted from Delaware, East Drive, section . . . Oak Ridge, to North Portal, straight day. Jim Martin, plant phone 3-5866, home phone Oak Ridge 483-3375.

August — — — No Retirees!

Maybe it's all because nobody aged during August, 1969!

For the first time in recent times nobody is retiring this Friday, August 29 . . . early or otherwise!

Riggs-McElroy Are Melton Hill Leads

Riggs-McElroy grabbed the Melton Hill Golf League in its waning moments with a six-point win over Carter-Butler. Big ones were also taken by Gresham-Bell over Poly-Morehead (forfeit) and by Parrot-Parker over Babb-Baker.

Five points were picked up by Wright-Butler over Dunaway-Wright; Tiller-Clabough over Alvey-Phillips . . . and Sherrod-Wyrick over Tuck-Bartholomew. Gordon-Loupe also took five from Nixdorf-Holdaway.

Posting four were the Sewells over Ridings-Ellis . . . and sharing three were Ferguson-Winstead and Helton-Smith.

Walt Sherrod scored a low 36 for scratch honors of the week . . . Bill Helton fired a 34 handicap low.

Team	W	L
Riggs-McElroy	60	24
Babb-Baker	59	25
Wright-Butler	56	28
Ellis-Clabough	55	29
Tuck-Bartholomew	54	30
Parrot-Parker	53	31
Helton-Smith	49	35
Sherrod-Wyrick	46	38
Alvey-Phillips	43	41
Gresham-Bell	41	43
Sewell-Sewell	40	44
Ferguson-Winstead	36	48
Dunaway-Wright	35	49
Ellis-Ridings	34	50
Nixdorf-Holdaway	29	55
Carter-Waldrop	25	59
Morehead-Poly	25	59
Gordon-Loupe	16	68

Recreation



Monday, September 1

HOLIDAY—Labor Day.

Wednesday, September 3

VOLLEYBALL: 7 p.m. Informal play. New Jefferson Junior High School.

MELTON HILL GOLF LEAGUE: After work, Melton Hill Golf Course, Clinton.

BOWLING: Mixed League, 8 p.m., Ark Lanes.

Thursday, September 4

BOWLING: Classic League, 5:45 p.m., Ark Lanes.

HORSESHOE LEAGUE: 7 p.m. City Courts, Jackson Square.

'Bears Are Not Tame Animals!'

"Don't trust a bear—even if he poses for your camera!"

This friendly bit of warning to prospective campers comes from John Fleming, director of the National Safety Council's Public Safety Department.

Fleming notes that every year a number of persons in national parks and other camping areas are nipped or clawed while trying to coax bears to eat out of their hands.

"Remember," says Fleming, "these are not tame animals, to be treated as pets."

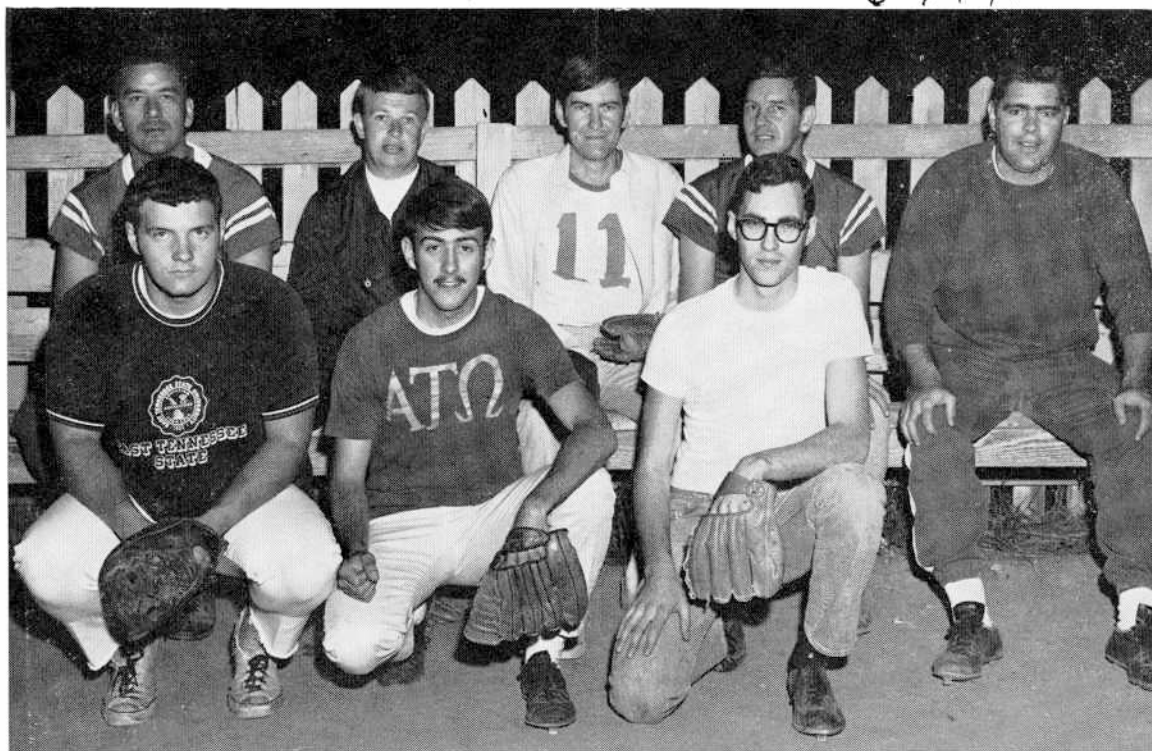
The reason bears appear to be so tame, Fleming explains, is because they frequently have no fear of people!

Bears, he says, stay around popular campsites to raid garbage pits, automobiles, and tents in search of food. Some of them even seem to pose for photographs!

"While it's unlikely that a bear would set out to injure a camper, the animal very well might snap and strike out with his claws if he's startled or frightened or if he thinks food is being taken away from him," Fleming says.

"The best thing," says Fleming, "is just to leave bears alone. In fact leave all warm-blooded animals alone as they might be carrying rabies."

In other words — "Look, but don't touch."

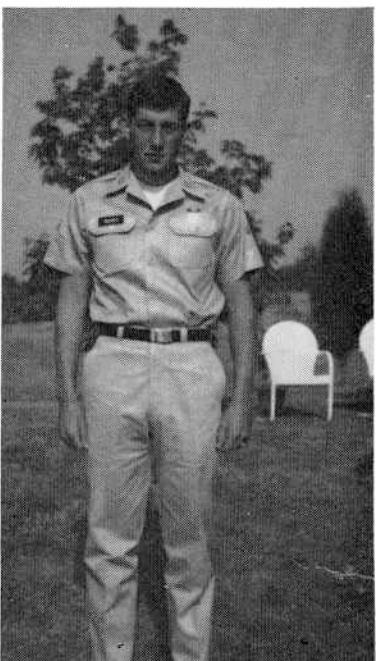


THE BAT BOYS claim to be better than their record indicates in the Softball League, and it appears that they could be right. In the front row are Ed Stair, Gary Starr and Julian Morrison. In the rear, from left, are Glynn Kitchings, Tom Smith, Douglas Sparks, Manager Romeo Green and Glen Bryson.

Army-Navy Share Sons Of A Y-12er



BM-3/C Michael W. Graves



PFC Charles Graves

The James W. Graves family (he's in Y-12's Chemical Services) has half of its number in the Armed Services . . . part in the Army, part in the Navy.

Michael, recently promoted to a Boss'n Mate Third class is stationed out of Charleston, South Carolina. He is aboard the USS Hunley, a sub tender. Mike recently returned from 18 months of duty around Vietnam on the LST Caddo Parrish. He took his

Braves, Snakes . . . Number 1, Number 2 As Softball Season Nears Final Curtain

Monday and Tuesday of last week were rained-out in Softball action . . . so play started on Wednesday, as the All Stars trounced the Show-Ups 25 to 4 . . . with big homeruns by Bovine, Self, Graham and Dobbs for the winning team.

C. Thompson clouted a four-bagger for the losers.

The Y-12 Snakes slid by the Buccaneers 10 to 9 in Wednesday's second game. E. Hall and Holland homered for the winners . . . J. Jones and L. Webb for the losers.

The Gashouse Gang galloped over the Eagles 24 to 6 in Wednesday's final play . . . Feldhaus, Regner and Marshall, all big heroes with homers for the winning cause.

The Beta 2 Miners took a forfeit win from the Beta 4 Astros.

Two K-25 teams collided Thursday in the opener . . . as the Colts came through with a 15 to 11 win over the J-Birds. The Birds almost pulled it out of the fire in the final inning, but their efforts were just not big enough.

John Keith and Sam Woodfin homered for the winners.

The Big Shops eased by the Yankees also Thursday 19 to 7 . . . as Frank Manning, Tom Craig and Bill Dean were big stars with homeruns for the winning Shops.

W. C. Smith and Bobbie Ruth-erford came through with homers for the losers.

The NC Squad sank the Gophers 16 to 8 in the week's final play Thursday. Lee Wickham socked a long one for the Squad.

The All Stars and Big Shops had to postpone their game because of effects from Camille.

basic training at Great Lakes . . . enlisting in 1967.

Another son Charles is currently serving in Vietnam. He is stationed at Chu Li, with the 36th Engineering Battalion of the Material Division.

Charlie was inducted in January of this year and trained at Fort Campbell. He shipped out to Asia in June.

Both Graves sons are graduates of Everett High School.

The Graves live at Route 2 Maryville. There are two other kids at home Teresa, 18; and Gary, 16.

League standings follow:

Team	W	L
Braves	15	0
Snakes	15	1
Eagles	13	3
Colts	13	4
All Stars	11	4
K-25 Gashouse Gang	10	6
69ers	9	7
NC Squad	9	6
J-Birds	8	8
Buccaneers	8	8
Yankees	7	9
Big Shops	6	9
Show-Ups	5	11
Go Go Gophers	4	12
Bat Boys	4	11
A Wingers	3	13
Beta 2 Miners	2	13
Beta 4 Astros	0	17

Case-Allman Slim Horseshoe Leaders

The Case-Allman team stayed in a bare lead in the Horseshoe League last week, after a six-point win over Durham-Harness.

The Nichols-Norris team capped five from Helms-Fowler and dropped five to the Wyatt-Wagner team.

Reed-Stephens posted seven at the expense of Durham-Harness . . . and Gray-Copeland took a like win from Bailey-Luckett. Wyatt-Wanger posted five at the expense of Gray-Copeland.

League standings follow:

Team	W	L
Case-Allman	19	8
Nichols-Norris	18	9
Reed-Stephens	16	2
Wyatt-Wagner	14	13
Gray-Copeland	11	16
Durham-Harness	10	17
Helms-Fowler	9	18
Bailey-Luckett	2	16

Knox Bowlers May Form Plant Leagues

The Recreation Departments in the three plants are considering forming bowling leagues for Knox County employees to roll at the Starlite Lanes, Cumberland Estates.

Starlite has availabilities Monday, Thursday and Friday at 6 p.m. . . . and at 8:30 p.m. on Monday, Tuesday, Wednesday and Friday.

The three plant competition could be women's teams, mixed teams, or men's teams. A minimum of eight teams per league would be required, however.

Y-12ers interested should call the Recreation Department, extension 3-7109. ORNL and K-25 employees should contact their respective recreation offices.

Art Hines Tops Final Tournament For Y-12 Golfers

Art Hines capped the final golf tournament of the year . . . scoring a one-under-par score of 71 at Whittle Springs Golf Club last Saturday.

Other scratch winners in the top 25 percent of golfers were John Baker, 73; Bill Mee, 75 and John Griffin and R. E. Plemons, 78 each.

Handicap lows went to E. N. Rogers and George Zurawick, 69; Jim George and Charley Gaylor, each with 78.

George Heins took 12 pars . . . Bill Jones and Tom Reed, 11.

SECOND FLIGHT

Joe Dick put a 78 score on the books to win the second flight. He was followed by J. D. Ball, 81; J. D. Collins, 82; and Bill Butturini, 84.

Handicap honors went to Hugh Henderson, C. R. Starlin, 71; John Sewell, 72; and Carl Redding, 731.

Ray Riggs and J. T. Parker scored eight parts.

THIRD FLIGHT

B. B. Stanton came through in flight three with a low 85. He was followed by J. R. Milligan and B. E. Rowland, 87; Dick Loveless, 89.

Handicap lows went to Mont Kendrick and John Watkins, 71; Sam O'Neal, 73; J. D. White, 74.

Larry McDonald and C. W. Nelson tied for par honors . . . each with seven.

FOURTH FLIGHT

H. C. Nichols nailed down an 88 for honors in the last flight. He was closely followed by O. H. Dunaway and E. V. Hawk, 90; O. C. Willard, 93.

Handicap lows went to R. L. Dayley, 69; Ken Cook and Gary Ellis, 70; and Brad Napier, 71.

Sam Gallman and R. C. Rector parred four holes.

A total of 135 Y-12ers played the Knoxville course in one of the finest golf days seen this summer.

You folks come back to the greens next Spring, O.K.?

Goss-Stanton Are SW Point 'Tops'

The Goss-Stanton team still dominates the Southwest Point Golf League by a rather comfortable margin. They took four points from the Bolt-Bush pair last week.

Smith-Henderson posted six at the expense of Jones-Morgan; and Mee-Wright grabbed the same sweeping number from Argo-Groppe.

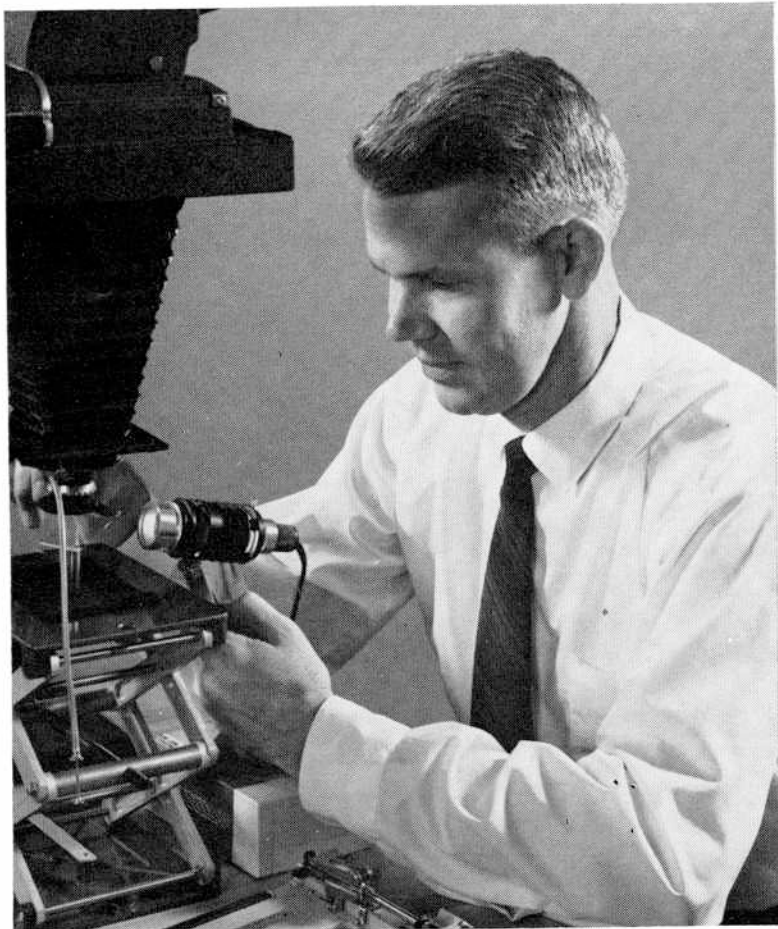
Goss fired at 42 for low of the week.

League standings follow:

Team	W	L
Goss-Stanton	60	24
Smith-Henderson	52	32
Jones-Morgan	45	39
Mee-Wright	40	44
Bolt-Bush	37	47
Argo-Groppe	18	66



"Don't laugh! Since I hired him he's uncovered several hundred dollars worth of tools hidden around here."



WARD BANDY, SUPERVISOR of Y-12's Photographic Laboratory, is seen at work. Bandy recently placed high among professional photographers with samples of his work.

Y-12 Photo Head Gleans Honors At Professional Association Meeting

A friend of the Bulletin's (for the past 15 years) came into some honors recently, as Ward Bandy, head of the Photographic Lab in Y-12, took honors at the mid-July Tennessee Professional Photographers Association conference held in Chattanooga. The annual convention was held at the Holiday Inn, July 12, 13, 14.

Ward's six black and white and color prints were all hung and given awards at the conference . . . a feat in itself. Then three of these were selected for the coveted court of honor . . . the top 10 per cent of all prints receiving awards!

Bandy's winnings this year are added to his honors picked up at previous state, regional and national salons.

Bandy has spoken at the TPPA convention once before this year . . . as well as the Southeastern PPA conference in Atlanta. He has been asked to speak at the Nashville conference next year.

The photographer served as Industrial Photography Program Chairman for the February, 1969,

Southeastern PPA convention.

The amiable photographer has been associated with the Y-12 Photo section for the past 12 years . . . its supervisor for the past two.

Cigarettes, Matches Are Big Fire Villains

Cigarettes and matches are the biggest villains when it comes to fire protection! About 162,000 fires in the U.S. alone result from the improper use and disposal of cigarettes or matches. Actually, people cause most of the 2,400,000 fires annually, through ignorance, carelessness and negligence.

STITCH IN TIME

Wife to reluctant husband helping small son with his homework: "You'd better help him while you can. He goes into the fourth grade next year."

SMALL DIFFERENCE

Some women find that it is sometimes just as hard to find a husband after marriage as it was before.



August becomes history . . . as September makes its entrance into 1969.

25 YEARS

Billy J. McNeely, ORNL Chemical Services, August 29.

Henrietta Y. Keene, Medical, August 31.

Robert Knaff, Buildings, Grounds and Maintenance Shops, August 31.

Paul F. Brownlow, Stores Department, September 1.

Eddie G. McCoy, Building Services Department, September 1.

15 YEARS

Carl J. Coley, Receiving Department, August 27.

Finley West, Microreproduction and Engineering Services, August 28.

Ernest L. Reed, General Shop Job Liaison, August 30.

Charles O. Campbell, Research Services, September 1.

Herbert A. Lay, Physical Testing, September 1.

10 YEARS

Jesse C. Maples, A-2 Shops, 9212, August 31.

Charlie B. Reich, Medical Department, August 31.

Jackie F. Ward, Utilities Administration, August 31.

Paul A. Evans, Metallurgical Development, September 1.

Kermit B. Reedy, Electrical Department, September 1.

Apologies to **Howard A. Price**, Dispatching Department, August 22 was his 20th anniversary with Union Carbide Corporation, not his 10th!

James L. Householder, Dimensional Inspection, celebrated his 25th anniversary August 13. His name was listed incorrectly in a recent Bulletin.

Raper Son Is Highly Praised

The Harrison Rapers, 123 Sputh Lansing, Oak Ridge, are the proud parents of Sgt. Jerry C. Raper, stationed at Fort Lewis, Washington.

While at Ft. Lee, Virginia Raper was named Soldier-of-the-month last November. He was judged on "personal appearance, military proficiency, attitude, conduct and awareness of the significant changes taking place world wide that will affect us all."

His most recent honor came after his promotion in a letter of commendation, forwarded from Ft. Lee to his present post. The letter read in part:

"While working under the operational control Sgt. Raper was responsible for the production of numerous graphic aids used for various briefings, conferences, and Department of the Army Status Reviews. His comprehensive technical knowledge resulted in the timely production of professional quality transparencies, charts and sketches. These graphic aids played an integral part in the success of the DA QRICC Reviews. Additionally he assisted with the administrative functions of the division enabling the staff to concentrate more on the development of the functional procedures and data processing program for the QRICC. Sgt. Raper's outstanding performance while handling the myriad administrative functions and his outstanding work utilizing his technical skills in graphic arts contributed materially to the successful accomplishments of the QRICC."

"Sgt. Raper readily executed all assignments dynamically and



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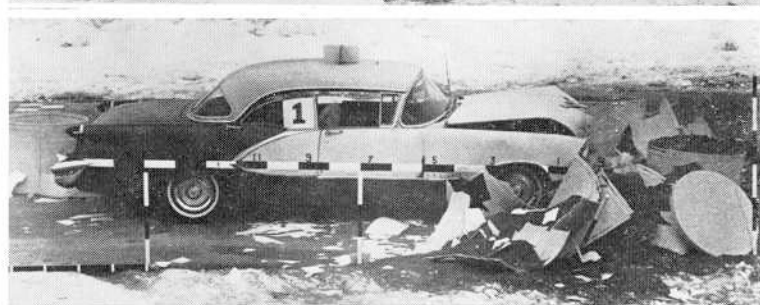
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HIGHWAY SAFETY FOR THE FUTURE . . . Sand erupts from plastic modules as 4,500-pound automobile strikes barrier at 50 m.p.h. Called the Fitch Inertial Barrier System, it is designed to decelerate and stop cars traveling at speeds up to 60 m.p.h. (top) before they can strike such fixed highway objects as exit ramp walls, bridge piers and abutments and sign posts without adverse dynamic effects and with little or no damage (bottom) and minor, if any, injuries to the car's occupants. Other devices designed to provide maximum highway safety for the future will be shown on 'The 21st Century' Sunday, August 31, at 6 p.m., EDT, in the report, 'Autos and all that Traffic.' The series is sponsored in the public interest by Union Carbide Corporation.

'Autos - All That Traffic' Topic For 21st Century Program Sunday

Space reporter and racing car buff Walter Cronkite will have his driving skills rated in "The 21st Century" report "Autos And All That Traffic" Sunday, August 31st, at 6 p.m., EDT, in color on the CBS Television Network. Cronkite is principal reporter for the series, which is sponsored in the public interest by Union Carbide Corporation. The program is aired here by WBIR-TV, Channel 10.

Viewers will see Cronkite's test conducted in a physiological testing car designed by Fletcher Platt, a Ford engineer. The car's gold-plated steering wheel electronically senses physiological information and records emotional response to traffic.

In an effort to provide new solutions to automobile safety problems, the report will focus on a major trend of the future which is to provide more information, control and responsibility to automated highways and less to the driver, thereby reducing the driver's margin for error.

Electronic systems which, if applied, could advise drivers on merging, passing, and "Tailgat-

efficiently. His interest aggressiveness, sincerity and devotion to duty made him a valuable member of the division and reflect great credit upon himself and the military service."

Sgt. Raper is a graduate of Oak Ridge High School and the Draughn School of Drafting, Nashville. He worked as a draftsman in K-25 before entering service.

The father is in Y-12's Buildings, Grounds and Maintenance Shops.

ing" will be shown, as will the Electronics Route Guidance System (ERGS). In experiments conducted in Washington, D.C., ERGS, a computerized highway routing system, will be shown giving the driver routing instructions complete with written street and road directions.

"Autos And All That Traffic" was written by Jon Wilkman. Fred Warshofsky is science editor for "The 21st Century" series; Isaac Kleinerman producer and Burton Benjamin is executive producer.

"Autos And All That Traffic" Sunday, August 31, at 6 p.m. over WBIR-TV, Channel 10.

AEC One-Ship

Continued from Page 1
mander, who is manager of marine operations for the project.

The Center's marine biology work is not limited to canal studies. Its research program, begun in 1962, is composed of six major projects, all dealing with trace element measurements in the sea. The most important field research area off Puerto Rico is a 20-mile stretch of the western coastline, encompassing watersheds and offshore areas of three rivers. One river drains a watershed with large amounts of limestone. Another has its origin in volcanic terrain containing copper deposits. The third drains an area with extensive outcroppings of serpentine, a mineral containing magnesium silicate. Thus each river carries unique assemblages of trace elements into the sea, making it a fascinating area of study for marine biologists.



SERGEANT JERRY C. RAPER was honored by a letter of commendation recently from his commanding officer at the U. S. Army Computer Systems Command Support Group at Fort Lee, Virginia. Raper was named soldier-of-the-month in ceremony at Ft. Lee back in November in the photo above.